ACADÉMIE ROYALE DE BELGIQUE.
(Extr. des Bulletins, 2me série, t. XVI, n° 7.)

NOUVELLES EXPÉRIENCES

SUR

LA RÉUNION DES FIBRES NERVEUSES SENSIBLES AVEC LES FIBRES MOTRICES;

PAR

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et

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Nous avons eu l'honneur de communiquer à l'Académie, il y a quelques années (1), le résultat des expériences que nous avions faites dans le but de résoudre l'intéressante question de savoir si les fonctions toutes différentes des fibres nerveuses sont inhérentes à celles-ci, ou si les effets qu'elles produisent dépendent uniquement

(1) *Bulletins*, 2e série, tome VII, n° 7.

des centres dont elles naissent et des organes dans lesquels elles se distribuent.

Ces expériences nous avaient fait admettre la première de ces alternatives. Nous avons donc conclu qu'une fibre nerveuse sensible ne peut être transformée en fibre motrice.

Depuis lors, deux physiologistes auxquels la science devait déjà d'utiles travaux, MM. Philippeaux et Vulpian, ont fait à l'Académie des sciences de Paris une communication (1) dans laquelle, en rappelant nos expériences (2), ils décrivent celles qu'ils ont faites dans le laboratoire de M. Flourens, par la réunion, sur deux jeunes chiens, du nerf lingual avec l'hypoglosse. Ces physiologistes disent que, quatre mois après cette opération, ils ont vu le lingual, coupé, déterminer des contractions de la partie correspondante de la langue, par la simple pression mécanique du bout de ce nerf au moyen d'une pince à dissection.

Dans les expériences de ces auteurs, l'excitation des fibres sensibles s'était donc transmise directement aux fibres motrices et avaient provoqué des contractions musculaires.

En présence de ce résultat contradictoire à celui que nous avions obtenu, nous avons cru devoir répéter nos expériences et les communiquer à l'Académie.

Deux chiens, âgés, l'un d'un an environ et l'autre de six à huit semaines, ont servi à ces expériences. Le premier a été opéré le 29 janvier 1863 et le second le 6 février de

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(1) *Comptes rendus*, n° 1, janvier 1863.

(2) Les auteurs disent par erreur que nous avons toujours examiné les nerfs plusieurs semaines après l'opération : c'est plusieurs mois qu'ils auraient dû dire. Nos expériences eurent lieu, en effet, de un à quatre mois environ après l'opération.

la même année. Chez tous les deux, les nerfs lingual et hypoglosse étant mis à nu du côté droit, la section en a été faite, puis on a reséqué un ou deux centimètres du bout central de l'hypoglosse, dont le bout périphérique a été ensuite réuni, par un point de suture, au bout central du lingual.

Ces animaux n'ont pas cessé de se bien porter; mais ils avaient tous deux la langue fortement inclinée à droite (côté de l'opération). Ils ont été successivement sacrifiés le 3 juin 1863 par la piqûre du bulbe rachidien.

Les nerfs du chien n° 1 ayant été découverts, nous avons trouvé le lingual solidement réuni à l'extrémité périphérique de l'hypoglosse par une cicatrice fusiforme.

Le bout central de celui-ci présente, au point de la section, une intumescence légèrement grisâtre, d'où se détache un mince cordon prolongé jusqu'à la cicatrice précitée.

Le lingual étant coupé aussi haut que possible, nous avons pressé ce nerf entre les mors d'une pince à dissection, puis la cicatrice et le nerf hypoglosse sans obtenir aucune contraction des muscles de la langue, muscles qui se contractèrent encore cependant sous l'influence de l'électricité appliquée directement sur leur trame. Nous avons ensuite observé de forts mouvements de la langue, lors de la pression de l'hypoglosse du côté non opéré (1).

Chez le chien n° 2, tué de la même manière, la dissection des nerfs, faite aussitôt après, démontre également la réunion du bout central du lingual avec le bout périphérique de l'hypoglosse, ainsi que le prolongement du bout cen-

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(1) Dans cette expérience, nous avons constaté de nouveau combien il faut se méfier des résultats affirmatifs obtenus par l'électricité. Les électrodes appliquées au lingual droit déterminaient de fortes contractions du même côté de la langue.

tral de ce dernier nerf, par un cordon de nouvelle formation partant d'un léger renflement grisâtre et se dirigeant jusqu'à la base de la langue.

Le pincement du nerf lingual, fait trois minutes après la mort et avant la section, a été immédiatement suivi de fortes contractions des muscles de la langue. La section ayant été ensuite faite, on a pincé le bout périphérique sans résultat dans les muscles linguaux : il ne se manifesta pas le plus léger frémissement dans ces organes. Par contre, la pression de la cicatrice de réunion des deux nerfs et du bout périphérique de l'hypoglosse excita de fortes contractions musculaires.

Ainsi, voilà un nerf sensible, le lingual, réuni à un nerf moteur, déterminant encore des mouvements réflexes par sa faculté sensitive, incapable de transmettre aux fibres déjà formées et reconnues par l'inspection microscopique dans la cicatrice, l'excitation motrice.

D'après ces résultats bien nets, nous devons maintenir les conclusions de notre premier travail. Nous déclarons donc de nouveau que les fibres nerveuses sensibles ne peuvent être transformées en fibres motrices (1).

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(1) Voir aussi Schiff, *Physiologie*, vol. I, Jahr, 1858-59, p. 155.

Bruxelles, impr. de M. Hayez.

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A COMMENTARY UPON A TABULAR STATEMENT OF THE NUMBER OF PAROXYSMS OF MALARIOUS INTERMITTENT FEVER THAT OCCURRED IN 146 MEDICAL CHARGES IN THE BOMBAY PRESIDENCY IN THE YEAR 1861, ARRANGED AS DATA FOR DETERMINING THE QUESTION OF THE MOON'S INFLUENCE UPON THESE FEVERS.

[From the Medical and Physical Transactions.]

A COMMENTARY UPON A TABULAR STATEMENT OF THE NUMBER OF PAROXYSMS OF MALARIOUS INTERMITTENT FEVER THAT OCCURRED IN 146 MEDICAL CHARGES IN THE BOMBAY PRESIDENCY IN THE YEAR 1861, ARRANGED AS DATA FOR DETERMINING THE QUESTION OF THE MOON'S INFLUENCE UPON THESE FEVERS.

By HERBERT GIRAUD, M.D., Edin.; Surgeon, Bombay Army, Professor of Chemistry and Botany in Grant Medical College.

That the Paroxysms of Ague or Malarious Intermittent Fever of Tropical Countries occur more frequently at the New and Full Moon than at other times is an opinion so generally entertained, both by professional and unprofessional people, that it is remarkable, that so small a number of actual observations, bearing upon the question, should hitherto have been recorded; and it is still more remarkable that these scanty records themselves either fail to prove the so-called Lunar Influence upon Fevers, or, in some instances, actually contribute to disprove it.

It is now nearly a century since Dr. Lind (1768) first directed attention to this subject, and from that period up to the present, almost all writers on Tropical Fevers have adverted to it: but those who have expressed their belief in Lunar Influence (and these are the majority) have founded that belief either upon general impressions, or upon the results of observations far too limited to justify the conclusions drawn from them.

In the year 1843, Dr. Peet, the present Principal of and Professor of Medicine in Grant College, Bombay, collated all that had then been written upon the subject in an Article in the 6th No. of the Transactions of the Medical and Physical Society of Bombay, entitled "An inquiry into the evidence which is recorded in relation to the Influence of the Lunar

changes upon certain forms of Disease." In that article Dr. Peet specially considers the evidence regarding the influence of the Lunar changes on Malarious Intermittent Fevers, and he conclusively shows that the opinion so commonly entertained, that Paroxysms of Intermittent Fever occur more frequently at the New and Full Moon than at other periods of the Moon's age, is certainly not supported by *recorded evidence*, and, in conclusion, he remarks " when we consider the very general idea which prevails upon this subject, it will appear almost surprising that so few facts are recorded in its favour ; as it might be thought there would be no great difficulty (by keeping records of the number of attacks of Fever in a Corps) in collecting such information as would be sufficient to prove at once, whether there is really that coincidence between the occurrence of this disease and the changes of the Moon, which the advocates of the doctrine would lead us to believe."

Since the publication of Dr. Peet's Paper the only recorded observations bearing upon the question are (so far as I am aware) those of Assistant Surgeon Day, of the Madras Medical Service, published in an article in the 10th No. of the Indian Annals of Medical Science, July 1858, entitled, "On Relapses in Tropical Fevers." In this article Mr. Day records the results of observations on the relations supposed to exist between the recurrences of Intermittent Fevers, and the seasons of the year and the Phases of the Moon : results deduced from 613 cases observed in the Deccan and Mysore. With regard to Lunar Influence, Mr. Day's conclusions are very undecided. It appears, however, that no coincidence could be traced by him between the admissions of Fever and New Moon ; but that a considerable increase of admissions took place about the Full Moon.

Mr. Day admits that his cases were too few to justify any strong statement being founded upon them. Mr. Day also endeavoured to ascertain whether the severity of the attacks was in any way traceable to Lunar Influence. He decides this in the affirmative ; and states that it was most remarked when

the Fever set in during the time of Full Moon. As regards relapses of Fever, Mr. Day gives a Table of 52 re-admissions, 20 of which took place at the New and Full Moon, and 32 at intermediate periods.

No one can read Mr. Day's paper without being struck with the insufficiency of the data upon which to found an inquiry into the truth or otherwise of Lunar Influence upon Disease.

The want of reliable evidence in support of the Influence of the Moon upon Periodic Fevers having been casually brought to the notice of the Commander in Chief—Sir Wm. Mansfield, His Excellency directed that records of Paroxysms of Periodic Fevers should be kept in every Medical Charge in the Presidency, with a view to determine the question by statistical evidence. The following Circular was accordingly issued to Divisional Deputy Inspectors-General of Hospitals, with the accompanying Form, No. 2000 of 1860, Bombay, 10th December 1860.

"The Principal Inspector-General Medical Department, having been directed by His Excellency the Commander in Chief to furnish data, extending over two years, to determine, if possible, the question whether Paroxysms of Remittent and Intermittent Fevers occur more frequently at the Lunar Phases* than at other periods, desires Deputy Inspectors-General of Hospitals will be so good as to request all Medical Officers in charge of Hospitals (European or Native, Civil Jail or Police) and Dispensaries to keep accurate registers of the Paroxysms of Fever occurring amongst their patients in the following form, one copy of which is to be forwarded monthly, along with other returns to Deputy Inspectors-General of Hospitals, for transmission to this office, and the other copy filed in the Hospital for inspection and reference."

These forms were issued in time for observations to be commenced on the 1st of January 1861, and these were continued

* New and Full Moon are here meant.

throughout the whole of the year. At the end of each month the forms, duly filled in, were transmitted by Deputy Inspectors-General of Hospitals to the Office of the Principal Inspector-General, and by his permission they were forwarded to me for arrangement and tabulation. The accompanying Table presents the results thus arrived at.

In the monthly Forms the dates of the New and Full Moon were purposely omitted, in order that Medical Officers might not be biassed in their observations by the Phases of the Moon being prominently noted.

In tabulating the results of observations from the monthly Forms I first noted the dates of New and Full Moon. I considered the so-called "Springs" (the periods of supposed "Lunar Influence") to extend from two days before to two days after the days of the New and Full Moon inclusive:—making *five* days at each Lunar Period, or *ten* days in the month, so that the two Lunar Periods together occupy *one-third* of the entire month:—leaving out of consideration the extra day in the months that have 31 days. Thus we have *ten days* in the month, during which the Lunar Influence (if any) may be supposed to exist, against *twenty days*, when it may be supposed to be absent:—and therefore if there be any truth in the opinion that Periodic Fevers commence and recur more frequently at the New and Full Moon than at the other periods of the month, it is obvious that more than *one-third* of the total monthly Paroxysms should occur in the ten days of the "Springs": and further, if this opinion had so broad a foundation in facts as its general prevalence would lead us to expect, then the Paroxysms recorded in the ten days of the Springs should *very notably exceed* one-third of the total monthly Paroxysms.

Now, on examining this table, it will be seen that in each month the number of Paroxysms occurring at the "Springs" is singularly near one-third of the total monthly Paroxysms: and when all the monthly totals for the year are added together, it is seen that, out of 56,175 Paroxysms, there were 18,077 at the

Springs, and 38,098 not at the Springs; thus showing not merely no preponderance in favour of the "Springs," but actually leaving a balance of 648 Paroxysms against the doctrine of the Influence of the New and Full Moon in Periodic Fevers.*

An attempt was made in the Monthly Forms to induce observers to distinguish between First or Primary and Recurring or Secondary attacks of Periodic Fever; because, those who hold to the doctrine of Lunar Influence are generally of opinion that it is in Recurring or Secondary attacks that this influence is most marked, and it was therefore thought desirable that this point should, if possible, be decided. I found however, in tabulating the observations, that it was quite evident that, either from the explanatory note in the Monthly Form not being sufficiently clear and explicit, or from some other cause, a great many observers failed to distinguish the Primary from the Secondary attacks. Thus certain observers entered all their cases as Primary, whilst other recorded all theirs as Secondary, although it cannot be believed that, in a particular Regiment or Station, the cases of Periodic Fevers were, for a whole year, either all Primary or all Secondary. This error of observation consequently would prevent any conclusive result being arrived at regarding the relative bearing of Lunar Influence upon Primary and Secondary Paroxysms of Fever (supposing such influence to exist), but it in no way affects the value of these observations as data for the determination of the general question of Lunar Influence;—because, if from the whole observations taken collectively, the fact of Lunar Influence cannot be proved, then of course the supposed influence in Secondary cases must fail of proof also.

It must be remarked also that, in so very large a number of cases as that which came under observation, it is probable that Diagnosis was occasionally at fault, and that some of the supposed cases of Periodic Malarious Fever were in reality those

* $56{,}175 \div 3 = 18{,}725 - 18{,}077 = 648$.

of Inflammatory and Hectic Fevers. But as such cases must have contributed in very small proportion to the 56,175 recorded Paroxysms; and as it has never been supposed that such fevers are in any way influenced by the Phases of the Moon, their being included in the Table of Results cannot affect the question at issue either one way or the other. Nor can the question be affected by occasional errors of omission and commission in the filling in of the Monthly Forms; because such errors would not be more liable to occur at one period of the month than at another; and therefore in so large a mass of observations, they would neutralize one another and would not affect the general result. It has been asserted by some that it is only in certain localities (as for example in Sind and Goozerat) that Lunar Influence is manifested. On referring to the Table it will be seen that the returns from these Provinces give no support to this opinion; but, on the contrary, that the Paroxysms occurring within the *ten days* of the Springs are as near as possible one-third of the told monthly Paroxysms: in some months a little more, in others a little less than one-third.

The Table is a record of 56,175 Paroxysms of Fever, that occurred in 146 different Medical Charges, at 44 different Stations, throughout the Bombay Presidency. It presents therefore the results of far more extended observations than have ever been brought to bear upon this question. If, therefore, it should be admitted to be sufficiently trustworthy for the purposes of induction, it must lead to the inevitable conclusion, that Paroxysms of Malarious Periodic Fevers do not occur more frequently at the 'Springs' than at other periods of the month. Such disproof of the Moon's Influence is the conclusion that has been invariably arrived at, whenever observations, statistically recorded, have taken the place of superstitious belief and of general and vague impressions. It has been thus with the reputed Influence of the Moon on Plague, Asthma, Hysteria, Insanity, Periodical Hæmorrhages and Cholera. A most noteworthy instance in illustration of this occurred but a few years ago with regard to Epidemic Cholera, the attacks

of which were very generally believed (particularly in the Madras Presidency) to be more numerous at the New and Full Moon than at the other Lunar Periods. When, however, by order of the Madras Medical Board, cases were selected from different official records, it appeared that, out of 7,664 cases observed, 3725 were admitted during the quarters of the New and Full Moon, and 3939 during the first and last quarters: leaving therefore a difference of 214 cases against the prevalent opinion. But the pertinacity with which a belief in the Moon's Influence is generally maintained in spite of the opposing results of observation is not confined to its supposed relation to Disease. It is equally remarkable with regard to the general belief in the Influence of the Moon upon the Weather. For although some years ago Arago, from extended observations recorded in various parts of the world, came to the conclusion that there exists no relation between the Phases of the Moon and the states of the Weather, and although our own Astronomer Royal, Airey, has more recently arrived at the same conclusion from different observations, yet to this day even well-informed people confidently predicate the changes of the Weather from the known dates of the changes of the Moon. In Bombay, people will confidently tell you that on such a date the "Monsoon will burst," because that is the day or near the day of the New Moon. They seem to forget that, as a general rule, the Monsoon bursts at dates differing within a fortnight or three weeks of each other at different parts of the Coast, and that, although it may occur at some one place at the New Moon; that place cannot always happen to be Bombay: for they surely would disclaim the idea that Bombay is peculiarly under Lunar Influence. At this very time (October 1st) there is a general and very firm belief in Bombay, even amongst enlightened Europeans, that a Cyclone is to sweep over the Island on the 23rd instant, because the Moon happens to be New and in Perigee on that date. Now in the first place, it has never been proved by the observations of Reid, Piddington, Thom, or of any of the writers on the "Law of Storms," that they occur

more frequently when the Moon is New and in Perigee than at other times; and secondly, a Cyclone frequently occupies several weeks in traversing the Indian Ocean, and during this time the Moon has passed through several of her phases. Moreover, supposing a Cyclone should happen to occur at a certain place at the New Moon, it does not appear why that place should be Bombay in preference to other parts of the Indian and China Seas.*

This prevalent notice of the connexion of Diseases and of atmospheric disturbances with the New and Full Moon would appear to result from two causes: first, the known relations of the Tides to the phases of the Moon, and secondly, the fact that New and Full Moon are well marked and notable periods. I have had it said to me;—" how can you deny Influence of the Moon upon Fever, when you know that it regulates the Tides"? a question betraying such utter ignorance of the first principles of logical induction as to prevent one's wonder that it should have been put. Again, the New and Full Moon are well marked periods; so that recurrences of Fever happening at the Springs are specially noted, whilst the frequent occasions on which they take place at other periods of the Moon pass by unheeded. Some years ago, when the old slow Steamers were very irregular in the dates of their arrival, it was a prevalent belief in Bombay that the English Mail came in more frequently on a Sunday than upon any other day in the week. Sunday is more marked and notable than any other day in the week; and therefore, when it did so happen that the Steamer arrived upon a Sunday, it made a greater impression, and was associated more permanently in memory with that day, than it would have been had it arrived upon either of the other six days of the week.

This peculiar fallacy in induction was well known to and was pointed out by Lord Bacon (Novum Organon, Aphorism XLVI.) He says:—" Men mark the events where they are

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* The predicted Cyclone did not occur.

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Tabular Statement of number of Paroxysms of

A Paroxysms at the Springs. B Paroxysms n

a Primary attacks. b Secondary att

	STATIONS.	HOSPITALS.	JAN A a	JAN A b
Presidency Division.	Colaba	56th Foot	..	..
	Bombay	2nd Battn. and 4 Co. 1st Bn. Art.	2	..
	Do.	European General Hospital	..	3
	Do.	2nd Grenadier Regiment N. I.	4	25
	Do.	23rd Regiment N. I.	4	26
	Do.	Marine Battalion	..	21
	Do.	Jamsetjee Jejeebhoy Hospital	29	9
	Do.	House of Correction	6	..
	Do.	County Jail Hospital	3	..
	Do.	Central School Hospital	3	5
	Do.	Police Hospital	2	1
	Tanna	Detachment 2nd Gren. Regt N. I.	4	8
	Do.	Civil Hospital	2	..
	Do.	Jail Hospital	2	3
	Do.	Police Hospital	18	24
Poona Division.	Poona	Bombay Horse Brigade	1	..
	Do.	1 Batt. 13th Brig. & Details R. A.	..	15
	Do.	2 Batt. 13th Brig. Royal Art.	..	2
	Do.	1st Bombay European Regiment	29	..
	Do.	Details ditto	1	..
	Do.	Detachment 56th ditto	43	4
	Do.	57th Regiment Depôt	..	..
	Do.	25th Regiment N I.	1	..
	Do.	Details Sappers and Miners	4	23
	Do.	Civil Insane and Police Hospital	10	..
	Do.	Jail Hospital	..	..
	Kirkee	1st Battalion Artillery	7	8
	Ahmednuggur	2nd Company 3rd Batt. Art	3	..
	Do.	6th Dragoons	5	..
	Do.	22nd Regiment N. I.	28	2
	Do.	Civil Hospital	1	3
	Do.	Jail Hospital	2	22
	Do.	Police Hospital	..	..
	Sattara	Detachment 56th Regiment	..	5
	Do.	Civil Hospital	11	..
	Do.	Jail Hospital	12	..
	Do.	Police Hospital	7	..
	Sholapoor	3rd Company 2nd Batt. Art	2	3
	Do.	28th Regiment N. I.	4	3
	Do.	Civil Jail and Police Hospital	12	1
	Aurungabad	4th Company 4th Batt. Art.	..	..
	Do.	3rd light Cavalry	1	4
	Do.	8th Regiment N. I.	6	20
	Do.	26th Regiment N. I.	2	16
	Malligaum	6th Company 4th Batt. Art.	..	..
	Do.	6th Regiment N. I.	3	..
	Seroor	1st Poona Horse	..	..
	Do.	2nd Poona Horse	..	..
	Dhoolia	Detachment 6th Regiment N. I.	4	..
	Do.	Detachment Poona Horse	1	1
	Do.	Civil Hospital	2	..
	Do.	Jail Hospital	..	..
	Dharumghaum	Candeish Bheel Corps	10	1
	Nassick	Civil Hospital	9	..
	Do.	Detachment Police Hospital	3	..
	Poorundhur	Sanitarium	..	32
Northern Division.	Ahmedabad	4th (King's Own) Regiment	12	18
	Do.	11th Regiment N. I.	54	10
	Do.	14th Regiment N. I.	25	2
	Do.	Guzerat Irregular Horse	8	1
	Do.	Civil Hospital	1	..
	Do.	Jail Hospital	5	..
	Do.	Police Hospital	21	1
	Dooliakote	3rd Company 3rd Batt. Art	4	3
	Do.	4th Battalion Artillery	6	3
	Deesa	33rd Foot	..	12
	Do.	31st Regiment N. I.	87	..
	Aboo	Sanitarium	..	8
	Rajcote	Squadron 2nd Regt. Light Cav.	..	..
	Do.	Civil Hospital	..	..
	Do.	Jail Hospital	..	..
	Surat	Detachment 56th Regiment	6	15
	Do.	16th Regiment N. I.	106	7
	Do.	Jail Hospital	5	33
	Baroda	30th Regiment N. I.	23	35
	Broach	Detachment 16th Regiment N. I.	11	..
	Do.	Civil Hospital	..	..

	FEBRUARY.				MARCH.				APRIL.				MAY.			
	A		B		A		B		A		B		A		B	
b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
4	3	..	6	..	..	7	2	14	..	19	1	31	..	3	8	20
2	..	..	..	1	..	..	3	4	7	..	7	..	2	..	..	..
20	2	5	4	10	..	6	3	13	..	3	..	6	..	6	..	8
41	7	16	4	44	2	24	6	33	3	19	13	39	7	42	14	91
37	7	23	4	36	7	35	6	60	1	21	4	41	..	19	6	65
57	2	1	2	3	..	1	1	9	..	3	..	11	..	3	1	9
13	32	22	72	46	21	..	27	3	9	15	20	20	14	21	29	25
..	1	..	8	..	..	2	2	5	7	..	4	5	6	..	9	..
..	2	..	..	..	5	..	10	..	..	..	..	..	..	..	1	..
..	1	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..
..	..	..	1	..	2	..	3	..	3	..	7	..	6	..	2	..
6	5	14	12	36	..	..	..	..	..	..	..	..	..	..	..	..
3	1	1	1	1	1	1	..	..	..	7	2	6	..	7	3	19
6	2	2	5	6	3	2	7	13	4	6	2	9	5	9	7	13
47	11	20	30	32	5	8	15	9	3	3	6	5	9	4	9	2
..	..	..	..	..	..	..	2	..	2	..	1	..	1	..	4	..
24	..	7	..	9	5	7	1	42	2	..	12	12	5	..	6	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	25	..	36	..	31	..	40	..	5	4	38	1	12	3	10	2
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1	2	..	34	..	..	..	..	..	1	..	1	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	1	..	..	8	1	2	..	..	..	1	2	6	..	5	4	8
45	10	28	11	44	8	27	13	67	5	14	11	36	7	15	17	36
..	12	1	38	1	17	..	17	3	19	2	14	..	11	2	28	3
..	6	2	21	17	..	..	16	..	15	1	23	..	7	..	3	..
6	3	..	2	2	2	3	7	5	12	1	9	1	2	..	12	..
..	2	..	..	..	3	9	1	10	..	3	2	17	2	..	..	..
1	3	..	6	..	3	..	8	..	5	..	6	..	14	..	37	..
..	19	10	71	13	21	6	47	7	23	..	38	..	16	..	60	..
2	2	5	2	5	1	4	6	17	1	3	4	13	..	..	2	7
40	3	14	14	45	11	20	18	57	3	15	9	27	7	27	13	24
..	..	..	..	..	..	..	..	..	1	2	..	1	1	..	1	..
..	6	2	15	4	23	7	12	16	16	16	26	10	4	14	3	11
..	5	..	12	..	3	..	6	..	5	..	13	..	7	..	15	..
..	20	..	13	..	13	..	35	..	25	..	36	..	12	..	7	..
..	5	..	20	..	35	..	59	..	3	..	22	..	5	..	26	..
7	4	7	10	12	2	5	9	13	..	2	5	4	5	7	6	11
6	4	..	13	5	4	..	7	3	15	..	29	2	11	..	13	..
11	18	6	28	12	14	6	50	24	21	9	44	12	21	7	34	10
..	5	..	4	..	1	..	7	..	1	..	4	..	..	..	..	..
..	..	..	5	..	2	..	9	..	4	..	10	..	4	..	10	..
29	1	4	2	3	..	7	2	4	5	13	15	27	9	21	15	39
45	..	14	..	25	5	18	5	36	1	19	4	36	..	22	..	41
..	3	..	1	..	..	..	3	..	2	..	..	..	3	..	1	..
..	10	..	12	2	2	..	4	1	11	1	18	..	6	..	10	..
3	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
4	..	..	4	..	3	..	2	..	..	..	6	..	..	..	..	..
..	3	..	8	..	..	..	1	..	..	..	..	..	2	..	1	..
..	3	..	7	..	1	..	3	..	4	..	3	..	..	3	5	4
3	8	9	16	9	3	5	8	10	3	2	3	5	4	..	10	..
..	2	..	1	..	..	..	4	..	2	..	6	..	..	..	..	..
..	5	..	20	..	14	..	27	..	3	..	6	..	9	..	10	..
65	5	20	2	33	..	34	2	50	..	25	4	74	..	35	..	53
65	1	6	2	16	..	8	3	8	..	12	2	16	..	14	8	19
6	24	11	46	20	13	..	36	..	34	8	98	11	5	..	42	6
..	11	4	12	2	19	..	29	..	22	7	41	17	12	..	37	..
5	..	..	3	2	3	..	2	..	5	..	14	..	..	..	3	..
..	2	..	5	..	..	..	1	..	..	..	1	..	..	..	3	..
..	7	..	21	..	9	..	23	..	17	..	16	..	5	..	10	..
9	16	..	20	..	15	..	21	..	10	..	31	..	3	..	21	..
5	..	2	..	2	..	..	1	2	2	..	..	1	..	..	..	1
15	8	8	30	1	..	..	..	..	17	..	36	..	20	..	17	..
23	..	6	..	10	..	7	..	26	..	1	..	14	..	20	2	24
..	3	22	8	40	3	5	1	16	3	7	3	7	2	3	3	12
25	..	5	..	8	..	2	..	5	..	14	..	14	..	11	..	11
..	..	..	..	..	..	..	2	..	..	..	1	1	..	..	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	9	28	5	43	..	..	..	..	6	14	2	30	..	4	..	17
9	..	..	..	..	..	..	..	..	1	4	4	15	..	16	11	39
69	..	15	..	63	5	..	25	..	..	28	..	32	..	18	..	38
95	16	12	35	21	..	..	..	..	9	35	32	69	28	9	45	19
..	15	2	20	1	9	5	19	9	8	..	18	1	..	..	2	..
..	2	..	1	..	1	..	8	..	..	..	..	..	4	..	4	..

"The Springs" are here cons

These *five* a

JUNE.				J	
A		B		A	
a	b	a	b	a	b
12	38	6	63	13	120
1	..	..	..	..	..
..	..	..	..	..	3
15	30	39	66	..	..
8	29	7	50	2	28
..	15	..	20	..	8
30	5	46	23	22	24
..	..	7	5	3	4
5	..	14	..	..	..
2	..	4	..	1	..
..	..	4	..	12	..
..	..	..	..	..	..
..	1	..	4	2	3
4	4	5	17	3	2
1	..	14	4	3	..
5	..	7	..	..	..
..	3	..	7	..	2
..	..	..	..	..	..
3	..	2	2	3	..
..	..	..	..	..	..
..	..	..	..	..	..
..	..	..	..	..	..
..	..	2	2	1	5
2	13	18	47	6	25
7	11	30	12	13	9
8	..	10	1	9	1
2	..	6	..	..	..
1	..	3	..	2	..
8	3	24	3	4	1
13	..	26	..	20	2
1	2	1	4	2	2
3	7	9	27	3	7
2	1	..	1	2	4
14	..	31	12	[illegible]	13
17	..	27	..	36	..
6	..	5	..	8	..
19	..	33	..	18	..
1	..	1	5	4	6
3	2	2	2	1	2
4	4	7	12	11	19
5	..	4	2	..	..
..	..	2	..	..	..
..	5	3	24	..	20
..	9	2	15	3	12
..	..	..	..	3	..
3	..	11	6	4	..
..	..	..	..	..	..
..	..	..	..	..	..
4	..	13	..	11	..
1	..	3	..	..	..
..	..	1	..	..	..
2	..	7	..	11	..
7	3	10	2	27	..
..	..	..	..	4	..
4	..	10	..	1	..
..	23	..	44	..	12
..	..	..	..	..	18
9	..	4	5	7	5
16	..	20	..	7	..
6	..	5	..	3	..
..	..	1	..	3	..
6	..	19	1	6	..
5	..	21	..	7	..
2	..	3	..	2	2
..	..	6	..	12	..
..	29	3	51	..	25
..	..	..	..	..	..
..	3	..	20	..	2
1	1	..	..	..	..
..	10	2	11	..	..
..	..	..	..	..	..
..	4	2	11	3	7
5	7	32	18	102	16
..	33	..	52	..	28
..	..	..	..	..	..
1	..	11	..	22	..
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	Stations.	Hospitals.	A	
			a	b
Nor. Div.	Broach	Jail Hospital................	..	..
	Do.	Police Hospital	6	..
	Kaira	1st Company 4th Batt. Art.	2	5
	Do.	Civil Hospital	..	..
	Do.	Jail Hospital..................	..	..
	Do.	Guzerat Provincial Battalion	5	5
	Bhooj	1st Grenadier Regiment N. I.	5	3
	Dwarka	Detachment 1st Gren. Regt. N. I..	2	3
Southern Division.	Belgaum	2nd Company 1st Batt. Art	..	..
	Do.	83rd Foot	1	12
	Do.	18th Regiment N. I.	2	..
	Do.	24th Regiment N. I.	3	6
	Do.	Civil Hospital	..	9
	Dharwar......	Civil, Jail and Police Hospital ..	1	..
	Kulludghee ..	7th Regiment N. I.	2	5
	Do. ..	1st Regiment S. M. Horse........	4	23
	Do. ..	2nd Regiment S. M. Horse	..	12
	Do. ..	3rd Regiment S. M. Horse	..	5
	Kolapoor	2nd Company 2nd Batt. Art.	5	2
	Do.	10th Regiment N. I.	3	12
	Do.	Civil Hospital	..	..
	Do.	Jail Hospital	2	..
	Do.	Police Hospital................	2	..
	Rutnagherry ..	Civil Hospital	..	5
	Do. ..	Jail Hospital	1	..
	Sawant Warree	Jail Hospital..................	..	..
	Do. Do. ..	Police Hospital................	..	..
Sind Division.	Kurrachee	4th Company 3rd Batt. Art.	..	..
	Do.	3rd European Regiment..........	5	10
	Do.	64th Foot	3	8
	Do.	1st Belooch Battalion..........	1	..
	Do.	Civil Hospital	..	32
	Do.	Jail Hospital..................	36	30
	Do.	Police Hospital................	..	16
	Hydrabad	2nd Troop H. B.	1	..
	Do.	3rd Company 1st Batt. Art.	..	13
	Do.	Detachment 3rd Eur. Regt.	..	..
	Do.	2nd Belooch Battalion	9	..
	Hydrabad	Civil Hospital	..	..
	Do.	Jail Hospital	4	..
	Do.	Police Hospital................	..	3
	Shikarpoor ..	Civil and Police Hospital	2	..
	Do. ..	Jail Hospital..................	1	..
	Jacobabad	1st Regiment Sind Horse	2	..
	Do.	2nd Regiment Sind Horse........	..	..
Mhow Division.	Mhow........	Do. Battery H. B. Royal Artillery.	1	..
	Do.	4th Company 2nd Batt. Art.	1	..
	Do.	3rd Dragoons	..	..
	Do.	72nd Highlanders	1	2
	Do.	4th Regiment N. I..............	..	..
	Do.	9th Regiment N. I..............	..	..
	Nusseerabad ..	3rd Troop H. B.	..	2
	Do. ..	28th Foot	5	11
	Do. ..	1st Regiment Light Cavalry......	13	..
	Do. ..	12th Regiment N. I.	3	..
	En route to Nusseerabad	Squadron 3rd Dragoons..	..	..
	Neemuch	6th Batt. 13th Brig Royal Art.....	1	..
	Do.	2nd Bombay European Regiment.	12	..
	Do.	Left Wing 95th Foot	2	15
	Do.	2nd Regiment Light Cavalry	..	..
	Do.	13th Regiment N. I.	..	31
	Indore........	Detachment 4th Regiment N. I...	13	..
	Mundlaisir....	Detachment 4th Regiment N. I...	18	11
Aden.	Aden	5th Batt. 13th Brig. Royal Art. ..	..	..
	Do.	Right Wing 4th (K. O.) Regt.	1	5
	Do.	15th Regiment N. I.	8	..
	Do.	Sappers and Miners	..	..
	Do.	Civil Hospital	2	..
	Do.	Jail Hospital	3	..
			a	b
		Totals	872	731
		Totals	1,603	
			A	